A Revolution in Power Projection:
Ready, Set, Go!

Frank B. Randall Jr.

POWER PROJECTION in the 21st century will change little in concept but more in execution. Technological advances and resulting doctrinal changes will require agile minds and nonregimented approaches if US forces are to take full advantage of new opportunities.

The Chairman, Joint Chiefs of Staff, released Joint Vision 2020 in May 2000. The document extended and refined the concepts expressed in the earlier 2010 version, building on 21st-century development and transformation. The new vision's primary focus "remains a joint force capable of full spectrum dominance, persuasive in peace, decisive in war, and preeminent in any form of conflict."[1]

Four significant operational concepts from the 2010 vision remain as the 2020 vision foundation: dominant maneuver, precision engagement, focused logistics and full-dimensional protection. As the US Army moves ahead, it is taking a cautious approach, and rightly so. Unnecessary change is risky business. According to the current Army Posture Statement, changes will be condition-based; advances will be implemented only after carefully considering the conditions necessary to integrate the advance.

While changes are taking place, the Military Sealift Command (MSC) stands ready to help strategically pre-position Army equipment and supplies to global hot spots. The MSC also welcomes the opportunity to exercise the system with realistic tests of the pre-positioning force. Concurrently, MSC's surge sealift is adding new capabilities to rapidly transport sustainment and resupply materiel. These three concepts—pre-positioning, exercises and surge sealift—allow Army forces to perform combat missions where and when directed and for as long as required.

Currently 37 MSC pre-positioning ships are strategically located in the Mediterranean Sea, the Indian Ocean, and near Guam and Saipan in the western Pacific Ocean. The ships carry supplies and equipment for the combat services and fuel for the Defense Logistics Agency (DLA).

The US Marine Corps pre-positions equipment and supplies to support a Marine air-ground task force of up to 17,400 Marines for as long as 30 days. Like US Navy vessels, Air Force pre-positioning vessels carry a variety of munitions. Three tankers carry fuel for DLA's Defense Energy Supply Center. The remaining pre-positioning vessels carry an Army heavy brigade with two armored and two mechanized infantry battalions, port-opening gear, sustainment supplies and other support material.

Pre-positioning ships include long-term-charter commercial vessels, activated Ready Reserve Force (RRF) ships and US Navy ships.[2] Civilian mariners crew MSC-contracted ships, and federal civil service employees crew DLA fuel tankers. By participating in more than 100 exercises annually, MSC pre-positioning and surge ship crews train continuously for real-world contingencies.

To respond to a crisis, warfighters need to deploy as quickly as possible with gear and sustainment supplies. Rapidly deploying large amounts of equipment and supplies by surge sealift is critical to sustainment beyond the 30 days of materiel aboard pre-positioning ships. Fast sealift ships (FSS); large, medium-speed, roll-on/roll-off ships (LMSR); and the US Maritime Administration's RRF are the backbone of MSC's surge sealift capability, offering almost 10 million square feet of capacity.

Ready: Pre-positioning

The equipment, ordnance and supplies needed to conduct any large joint military power projection must move by sea; this has always been the case for the United States. Since the closure of many US overseas bases, sealift has become even more vital to Army regional operations.

Pre-positioning afloat began in the early 1980s to improve the response time for delivering urgently needed equipment and supplies to a theater of operations. Two decades earlier, the US Army had stored brigade-strength equipment aboard ships moored off Okinawa. During a threat to Laos by

Rapidly deploying large amounts of equipment and supplies by surge sealift is critical to sustainment beyond the 30 days of materiel aboard pre-positioning ships. Fast sealift ships; large, medium-speed, roll-on/roll-off ships; and the US Maritime Administration's RRF are the backbone of MSC's surge sealift capability, offering almost 10 million square feet of capacity.

North Vietnamese and Laotian rebels in 1961, a 25th Infantry Division brigade flew to Thailand from Hawaii while ships containing the unit's equipment were moved from Okinawa to Thailand. The brigade joined the equipment at the port, marking the first successful major maritime pre-positioning in the 20th century, proving that pre-positioning could dramatically cut force-closure times and increase intertheater agility.

In 1990 the United States, the largest trading nation in the world, carried less than 4 percent of its trade on US flagships.[3] The US merchant fleet had slowly eroded since World War II, producing a serious shortfall in the cargo capabilities that would be needed in a contingency or major war. Following the Gulf War, the US Transportation Command and MSC "sought to strengthen the nation's military sealift force through a balanced program of new ship construction and purchase of existing ships for the RRF. The proposal suggested adding 21 diesel-powered roll-on/roll-off ships (RO/ROs) to the RRF."[4]

At the same time, a congressionally mandated study identified an urgent need for greater sealift capacity to transport military equipment and supplies during wartime and other national contingencies. The study called for adding two million square feet of military cargo capacity for pre-positioning and three million square feet for surge sealift. To meet these needs, the study recommended adding five converted and 14 new LMSRs to the MSC fleet for pre-positioning and surge sealift. Five active commercial RO/RO vessels were purchased and converted for pre-positioning Army equipment and supplies. Of the 14 planned new ships, seven were for Army pre-positioning and seven for surge sealift.

Strategically placed in three squadrons, the MSC operates 14 pre-positioning ships for the US Marine Corps Maritime Pre-positioning Force. The ships are located in the Indian Ocean at Diego Garcia, near Guam and Saipan in the western Pacific Ocean, and in the Mediterranean Sea. The ships range in RO/RO capacity from 121,000 to 152,000 square feet and in displacement from 44,000 to 51,000 long tons. All carry their own ship-mounted cranes, varying in capacity from 30 to 50 tons, for offloads in ports with reduced capability or where no port exists. Lighterage is also embarked, permitting total ship offloads across an unimproved beachhead without port facilities.

The Marine Corps is adding three vessels, called Maritime Pre-positioning Force (Enhanced) ships, to their pre-positioning force. The first ship was delivered in April 2000. The second and third—an LMSR formerly used for surge sealift—will arrive in 2001.

The US Air Force uses three ships to preposition ordnance at various locations in the Mediterranean Sea and Indian Ocean. All three vessels have onboard cranes to on- and offload containerized cargo. Two have small RO/RO capabilities (10,000 and 56,000 square feet). The MSC and the Air Force developed a new capacity aboard two vessels called "cocooning," which allows up to 45-percent additional capacity per vessel. Cocooning provides sealed space on the ships' weather decks where containers are stored in a temperature- and humidity-controlled environment. This added capability eliminates the need for another vessel to carry the munitions stock levels the Air Force desires, saving up to $9 million a year in operating costs.

The MSC's Naval Fleet Auxiliary Force normally resupplies US Navy fleets. However, additional munitions are carried aboard one of two Navy pre-positioning ships homeported at Diego Garcia. The second ship carries a 500-bed Navy fleet hospital.

The DLA's Defense Energy Supply Center obtains and distributes petroleum products for DOD use worldwide. Three DLA pre-positioning ships carry a total of 660,000 barrels of fuel for aircraft, turbine-powered ground vehicles and equipment. Two vessels are at Diego Garcia; the third at Guam.

The Army's pre-positioning fleet of 15 vessels carries a heavy brigade consisting of two mechanized and two armored battalions and additional gear for opening and operating a seaport. Three ships carry Army watercraft (seven utility landing craft, six mechanized landing craft, four side-loadable warping tugs, three large tugs, two liquid cargo barges, a derrick barge and 135 40-foot ISO packs) that merge together to form a RO/RO discharge facility platform/floating pier. These ships also carry miscellaneous equipment in containers and aboard the watercraft and 335 pieces of logistic rolling stock such as trailers; bulldozers; tank trucks; and high-mobility, multipurpose wheeled

Gulf War observations showed that a full onload of containerized ammunition could take anywhere from 48 hours under optimum conditions to 70 hours under worst-case conditions. A break-bulk ammunition ship onloading the same cargo could take from eight days under ideal conditions to 14 days with multiple problems. Putting five divisions on the ground in 30 days will be impossible with 14-day loading times.

vehicles (HMMWVs). The ships also carry 21,000 barrels of diesel fuel for the watercraft and various logistic vehicles.

Three additional vessels are lighter-aboard-ship (LASH) vessels that each carry up to 60 barges preloaded with ammunition, containerized ammunition and two small pusher boats. Two container ships carry rolling stock, flatrack and containerized equipment associated with port-opening operations. The remaining seven ships are RO/RO vessels that carry rolling stock and containerized supplies for the two armored and two mechanized battalions, plus the requisite combat support equipment for headquarters, intelligence, reconnaissance and medical support missions. Altogether, Army pre-positioning ships offer almost two million square feet of RO/RO capacity.

Future needs. According to the 2001 Army Posture Statement, power projection, enabled by an overseas presence, will continue to be the future force's fundamental concept. Power projection for a land-based force means having the equipment in place where needed or strategically pre-positioned at sea to access any geographic area. Working toward the Objective Force outlined in the posture statement requires the Army to place a combat-capable brigade anywhere in the world within 96 hours. Airlift will play a key role. The next step—to have a division in place within 120 hours—includes pre-positioned ships filled with battle gear steaming to meet airlifted troops close to the mission point. Finally, having five divisions in theater in 30 days goes beyond pre-positioning to surge sealift and sustainment. The "steel bridge" concept from the Gulf War had, at the height of deployment, one ship every 50 miles across the seas between the United States and the Persian Gulf to meet warfighters' needs.

As a modern fighting force's needs change, so do the space requirements for pre-positioning its gear. An interim change projects three ships for a heavy brigade of one mechanized and two armored battalions plus three ships for a heavy brigade of two mechanized and one armored battalion. Other vessels will carry port-opening and force-provider gear. The new arrangement's flexibility will mean being able to apply the right force in the right situation. The giant LMSRs, each as long as an aircraft carrier, will provide the added space needed to reconfigure equipment and also provide covered storage capacities of more than 300,000 square feet per vessel. By 2002 eight of these ships will join the Army pre-positioning fleet.

The Army is also moving away from using LASH barges to carry ammunition, as the international standard for containerization has become the guiding light for the maritime industry. "Container advantages are many, but of most importance is their intermodal capability; they easily move from one mode of transportation to another, for instance from a truck, to a train, to a barge, to a ship and then, upon arrival overseas, back to a truck, a train, or a barge."[5]

Another factor is time. Gulf War observations showed that a full onload of containerized ammunition could take anywhere from 48 hours under optimum conditions to 70 hours under worst-case conditions. A break-bulk ammunition ship onloading the same cargo could take from eight days under ideal conditions to 14 days with multiple problems. Putting five divisions on the ground in 30 days will be impossible with 14-day loading times.

In February and June 2001, MSC will receive the two long-term-charter container ships that will carry Army ammunition. Loadout and deployment will follow shortly. By 2002 Army pre-positioning will consist of 15 ships: eight LMSRs, two heavy lift ships, two sustainment (container) ships, two ammunition (container) ships and a crane ship. This mix will carry Army pre-positioning well into the 21st century.

Set Exercises

Having all available warfighting gear close to a potential trouble spot only works if the equipment and the system that deploys it work as well. Exercises test new concepts and generally improve the pre-positioning program from a systems-engineering perspective. The basic idea is to find ways to get huge quantities of combat equipment and supplies deployed, offloaded, marshaled and to warfighters as quickly and efficiently as possible. Joint doctrine states that logistics over the shore (LOTS) operations occur where there are no ports or deep water access, where ports have been destroyed or severely damaged, or where ports exist but do not have the equipment to transfer cargo. Sometimes that transfer must use LOTS, "loading and unloading ships without the benefit

Joint doctrine states that logistics over the shore (LOTS) operations occur where there are no ports or deep water access, where ports have been destroyed or severely damaged, or where ports exist but do not have the equipment to transfer cargo.

Equipment offloading from the RO/RO USNS *Seay* during a joint logistics over the shore (JLOTS) exercise off Camp Pendleton, California. Existing equipment limits operations when winds are over 16 knots and waves exceed 5 feet.

USTRANSCOM

of fixed-port facilities in either friendly or undefended territory and, in time of war, during phases of theater development."[6]

Joint logistics over the shore (JLOTS) means that two or more services conduct LOTS and effectively transfer cargo from ship to inland staging and marshaling areas. Successful interoperability is central to the success of Joint Vision 2020. JLOTS exercises allow combat units to participate in practice offloads in various conditions using Navy and Army causeway systems as floating platforms between ships and other watercraft. Exercises usually involve the Navy's beach-group units and amphibious construction battalions and the Army's 11th and 24th Transportation Battalions. JLOTS equipment carried aboard pre-positioning ships can be offloaded using onboard cranes. Warping tugs and causeway ferries carried as cargo can propel individual sections of floating causeway into position.

Existing JLOTS system equipment limits operations when weather conditions are at least sea-state 3 (winds up to 16 knots and waves up to 5 feet) or greater, reducing its effectiveness. Because war and contingency operations do not necessarily wait for good weather, the military needs equipment that will operate at the sea-state 3 level. The requirement to operate in sea-state 3 is based on conditions existing for more than 50 percent of the time in several areas critical to US interests. Various agencies and organizations are examining several concept systems to address the issue. Meanwhile, JLOTS exercises continue to test current equipment and procedures.

Each year a JLOTS exercise is held in a different geographic area of responsibility. In Fiscal Year (FY) 2000, visiting dignitaries and NATO military representatives observed a JLOTS exercise off Virginia's coast and an operational exercise off California's coast. The FY 01 JLOTS exercise will take place in the 7th Fleet area of responsibility in

During a threat to Laos by North Vietnamese and Laotian rebels in 1961, a 25th Infantry Division brigade flew to Thailand from Hawaii while ships containing the unit's equipment were moved from Okinawa to Thailand. The brigade joined the equipment at the port, marking the first successful major maritime pre-positioning.

A row of AC-1 Caribou at an airstrip near Korat, Thailand, in 1961. The 27th Infantry (Wolfhounds) were flown in from Hawaii and received pre-positioned equipment from Okinawa.

US Army

conjunction with an annual exercise of the containerized ammunition-delivery system. Units using the JLOTS system constantly request additional training and exercise opportunities, but in a resource-tight budgetary environment, these relatively high-cost exercises have been limited to one per year. Because JLOTS operations are critical to the concept of placing five combat divisions in theater within 30 days, additional exercises are needed.

Go! Surge Sealift

The first priority in a crisis is getting the initial field combatants all the gear they need for the first few days of combat. Surge sealift will keep warfighters in business for the long term. By using commercial resources from the Voluntary Intermodal Sealift Agreement Program, the Army offers monetary and business incentives to commercial operators in exchange for availability of suitable vessels for military cargo. When those resources are exhausted, MSC's eight FSS and four LMSRs, along with the 90 RRF ships that are under MSC control after activation and are the backbone of surge sealift, will provide lift capacity for both RO/RO and containerized cargo. By 2002 seven additional LMSRs (three new and four converted from pre-positioning) will join the surge sealift force, increasing its cargo capacity to almost 10 million square feet.

Each of the eight FSS has 50,000 square feet of storage and can travel up to 27 knots. These characteristics make the FSS ideally suited to transporting Army equipment—tanks, helicopters, wheeled vehicles and other heavy equipment—to support deployed troops worldwide. The FSS's cargo holds contain a series of decks connected by ramps so vehicles can be driven in and out of storage areas for rapid loading and unloading. The ships also have four cranes—twin cranes amidships, each capable of lifting 35 long tons (70 tandem) and twin cranes aft, each capable of lifting 50 long tons (100 tandem).[7] The FSS allows MSC to transport an armored division's equipment rapidly while the cranes load and offload freight in places without port facilities.

LMSRs are being added to the MSC fleet to offset the shortage of militarily useful commercial cargo ships. This is a growing concern because the military has become increasingly dependent on power projection from sea-based assets because

Working toward the Objective Force outlined in the posture statement requires the Army to place a combat-capable brigade anywhere in the world within 96 hours. Airlift will play a key role. The next step—to have a division in place within 120 hours—includes pre-positioned ships filled with battle gear steaming to meet airlifted troops close to the mission point. Finally, having five divisions in theater in 30 days goes beyond pre-positioning to surge sealift and sustainment.

of overseas base closures. With a huge, six-deck interior, each LMSR has a cargo capacity equivalent to six and one-half football fields. That is enough room for an entire armor task force, including 58 tanks, 48 other tracked vehicles and more than 900 trucks and other wheeled vehicles. Additional vehicles and containers can be carried on the weather deck.

A slewing stern ramp and a movable ramp that can service either side port facilitate both on- and offloading, making it easy to drive vehicles on and off the ship. This speeds the loading and unloading to just 48 to 72 hours total per shipload. Two sets of single-pedestal twin-boom cranes, rated at 35 long tons (70 tandem) and 56 long tons (112 tandem), make it possible to load and unload cargo where shoreside infrastructure is limited or nonexistent. Lighterage mooring fittings are installed for loading and unloading cargo while at anchor. While a little slower than the FSS, the LMSR can travel at 24 knots and has almost twice the cargo capacity.

RO/RO vessels are the primary choice for carrying Army unit equipment because of their quick on- and offload times. MSC has access to a fleet of RO/RO ships through the RRF. The US Maritime Administration, a Department of Transportation agency, maintains all but four of these ships in reduced operating status. They can be activated—fully crewed and ready to get under way to a US loading port—in four or five days. The 31 RO/RO ships in the RRF are being modified to increase their capacity. Several will receive an additional deck for more RO/RO space.

Achieving and maintaining full-spectrum dominance over the next 20 years requires people with exceptional talent, great mental agility and total dedication. The MSC prides itself on delivering innovative maritime solutions to national security objectives, such as sea-based power projection through pre-positioning. By using pre-positioning, the Army will likely continue to expand based on its changing force and its need to place a combat-ready brigade on location within 96 hours and a division within 120 hours.

Increased JLOTS exercises could be the key to future joint and combined operations. Unfortunately, JLOTS exercises are relatively expensive, hence the limit of one per year. However, as joint operations responding to real-world contingencies increase, interoperability becomes even more critical to the success of US military actions. Military leaders should give serious consideration to this budget-starved item in future budget requests.

Finally, surge sealift remains the backbone of sustaining US forces worldwide. Adding two million square feet of cargo storage in the form of new LMSRs will assure the Joint Chiefs of Staff that Army warfighters are sustained and resupplied quickly and efficiently wherever they are, whatever their need. Pre-positioning, exercises and surge sealift—ready, set, go! The US Army, its sister services and the MSC will be there where and when the need arises. ***MR***

NOTES

1. News Release 294-00, Office of Assistant Secretary of Defense, Public Affairs, Washington, DC (30 May 2000).
2. The Maritime Administration (MARAD) maintains the Naval Defense Reserve Fleet (NDRF). The Reserve Ready Force (RRF) is a quick-response subset of the NDRF. The RRF is a select group of ships within the NDRF that is relatively modern, highly militarily useful and rigorously maintained to meet Coast Guard and American Bureau of Shipping standards. They are crewed by MARAD personnel in an increased state of readiness that would permit their activation within four, five, 10 and 20 days.
3. James K. Matthews and Cora J. Holt, *So Many, So Much, So Far, So Fast: United States Transportation Command and Strategic Deployment for Operation Desert Shield/Storm* (Washington, D.C.: Joint History Office, Office of the Chairman of the Joint Chiefs of Staff and Research Center, US Transportation Command, 1996), 128.
4. Ibid., 129.
5. Ibid., 181.
6. Joint Publication 4-01.6, *Joint Tactics, Techniques, and Procedures for Joint Logistics Over the Shore* (Washington, D.C.: US Government Printing Office, 12 November 1998).
7. A long ton equals 2,240 pounds.

Frank Randall is the senior writer for the Military Sealift Command Public Affairs Office, Washington Navy Yard, DC. He received a B.S. from Bradley University and is a graduate of the Air Command and Staff College, Maxwell Air Force Base, Alabama. He has served in various public affairs positions, including public affairs specialist, US Nuclear Waste Technical Review Board, Washington, DC; chief, Media Relations, 513th Airborne Command and Control Wing, Royal Air Force, Mildenhall, England; writer/editor, Regional Learning Resources, Department of Veterans Affairs, St. Louis, Missouri; public affairs officer, Military Airlift Command, Scott Air Force Base, Illinois; and chief, Public Affairs, 410th Bomb Wing, K.I. Sawyer Air Force Base, Michigan.